International Journal of Library
Science and Research (IJLSR)
ISSN(P): 2250-2351; ISSN(E): 2321-0079
Vol. 6, Issue 6, Dec 2016, 69-76

TRANS STELLAR
•Journal Publications •Research Consultancy

COMPUTER WORKSTATION ERGONOMIC ISSUES IN SELF-FINANCING ENGINEERING COLLEGE LIBRARIES IN COIMBATORE: A PILOT STUDY

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ABSTRACT

This article examines the present situation of computer workstation in the Self Financing Engineering College Libraries in Coimbatore with ergonomic standards and analyses the discomfort level of employee while they are working at a computer workstation. This paper gives some suggestions to fulfill the ergonomic standards and recommends ergonomic training which will reduce ergonomic problems.

KEYWORDS: Ergonomics, Computer Workstation, Postural Dimensions of Equipment, Self – Financing Engineering College Libraries

Received: Oct 01, 2016**; Accepted**: Nov 25, 2016**; Published:** Dec 07, 2016**; Paper Id.:** IJLSRDEC20167

Original Article

INTRODUCTION

The library is an essential component of an institution's intellectual expression. Libraries must design the space in such a way that would meet the needs of teaching, learning and research. Ergonomics is a scientific discipline concerned with improving productivity, health, safety, comfort, and helping people and technology work together. Ergonomics is a discipline that extends across all aspects of human activity. It is also known as human engineering. It encourages the design or modification of work places to match human characteristics and capabilities. The use of ICT services, requires working at a computer for long hours. It may result in some form of ergonomic problems. Most of the workers are suffering from back pain, neck pain, sore wrists, arms and legs, and eyestrain which are all symptoms of ergonomic problems.

SIGNIFICANCE OF THE STUDY

The library and library professionals are crucial to the support of the mission and vision of any academic institution. Nardi, O'Day, and Valauskas (1996) say that, "librarians are more than technicians, they are, it seems information therapists who analyze problems as well as find answers." Valauskas (1997) observes that librarians are becoming more important in this information-centric universe. Librarians are already fulfilling new roles as content providers, search strategists, digital cataloguers, and information mechanics.

Bade (2008) uncovers valuable literature on failure in organizations and technical systems, which is the literature of ergonomics. He makes the case that ergonomics are crucial to the implementation and use of technology. The findings of this study will raise an awareness of ergonomic problems and give the knowledge about the administration of academic libraries to be proactive in the formation of staff safety policies, acquisition

of library infrastructure, and procurement of resources of their libraries.

STATEMENT OF THE PROBLEM

The adoption of ICT has resulted in the globalization of information and knowledge resources. The rapid increase of computers in academic libraries has not been accompanied by changes in workstation design. As computer use increases, the application of ergonomics in risk avoidance becomes critical. The study examines the ergonomic problems and physical symptoms experienced by library professionals who make use of ICT resources in carrying out their daily routine, as well as the ergonomic measures put in place for the Library professionals in Coimbatore District.

OBJECTIVE OF THE STUDY

- To Identify the ergonomic issues in self-financing engineering college Libraries in Coimbatore
- To study whether the libraries have met the ergonomic standards
- To assess the choice of furnishing and Computer Workstation equipment's
- To assess the Computer Workstation with ergonomic Standards
- To study about the organizational issues, such as the design of job and scheduling
- Increasing awareness of ergonomic among all Library Professionals.
- Identifying areas where ergonomic will most effectively reduce employee stresses.
- Communicating concerns about equipment, work methods and organizational design among employees.

METHODOLOGY

The target population for this study is the library professionals of Self-financing Engineering Colleges in Coimbatore. Copies of questionnaires were distributed to the library professionals and the population sample was made up of all library staff who make use of a computer and other ICT related resources, and who spend long hours carrying out their daily responsibilities.

Limtiations

This study covers only the self-financing Engineering College Libraries in Coimbatore District.

DATA ANALYSIS

The responses to the structured close-ended questions are rated in percentage. The percentage of respondents for each alternative is analyzed. The collected data have been analyzed by Statistical Methods.

Gender Wise Distribution of Respondents

Table 1: Views the Gender Wise Distribution of Respondent's. Out of Total Respondents, 79.1% are Male Professionals and the Remaining 20.9% are Female Professionals

Gender	Percentage
Male	79.1%
Female	20.9%

Designation Wise Distribution of Respondents:

Table 2: Shows that 72.1% of the Respondents are Librarian / Senior Librarian Cadre and Very Least Number (2.3%) are Assistant / Technical Assistant Cadre

Designation	Percentage
Librarian / Senior Librarian	72.1%
Assistant Librarian Sr. Gr.	14%
Assistant Librarian Sl. Gr	7%
Professional Assistant / Technical Assistant	2.3%
Others	4.7%

Average users Per Day

Table 3: Indicates the Average Users Per Day in a Particular Library. It Shows that More than 44% of Libraries Have 201-300 Users Per Day. On an Average and 14% of Libraries are Having Above 300 Users Per Day

No. of Users	Percentage
Less than 100	25.6%
101 – 200	44.2%
201 – 300	16.3%
Above 300	14%

Usage of Computer in Library Housekeeping Operations

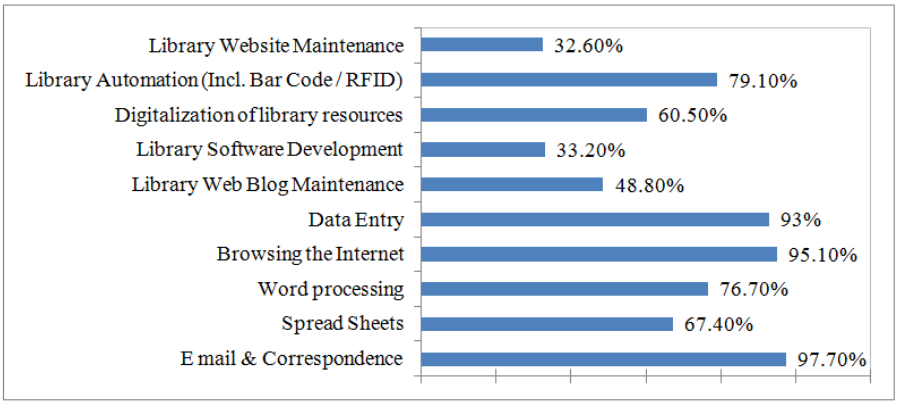


Figure 1: Highlights the Usage of Computers in Library Housekeeping Operations. It Shows that the Majority of Library Professionals (97.7%) are using Computers for "E-mail & Correspondence", 95.10% user for Browsing Internet, 93% use Computers for Data Entry, and More than 70% of Library Professionals are using the Computer for the Core Areas of Library Housekeeping Operations (i.e) Library Automation, Digitization of Library Resources Etc.,

Availability of the Required Equipments as Per Ergonomics Standard in the Computer Work Station

Table 4: Represents that More than 80 % of Libraries are Having "Adjustable Ergonomic Chair" and 69.8% of Libraries are Having "Adjustable Keyboard and Mouse Tray". But Most of Libraries Don't Have the Other Required Equipment like Monitor riser, Foot Rest, Mouse Bridge, Mouse Wrist Pad etc.,

Required Equipment's	% of Availability in Library
Adjustable ergonomic chair	83.7%
Adjustable keyboard / mouse tray	69.8%
Back support cushion	53.5%
Monitor riser	41.9%
Foot rest	44.2%
Mouse bridge	37.2%
Wrist rest pad	37.5%

Table 4: Contd.,	
Anti - glare screen	20.9%
Reference document holder	30.2%
Slant board for reading	39.5%
Telephone headset	55.8%

Availability of Computers in Difference Sections of the Library:

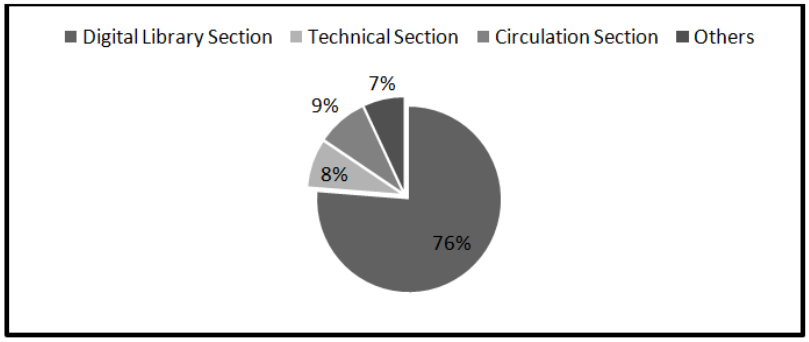


Figure 2: Signifies that Most of the Computers are Occupied in Digital Library Section (76%) Followed by Circulation Section (9%) and Technical Section (8%) etc.

How Many Hours in a Day Do You Work on the Computer

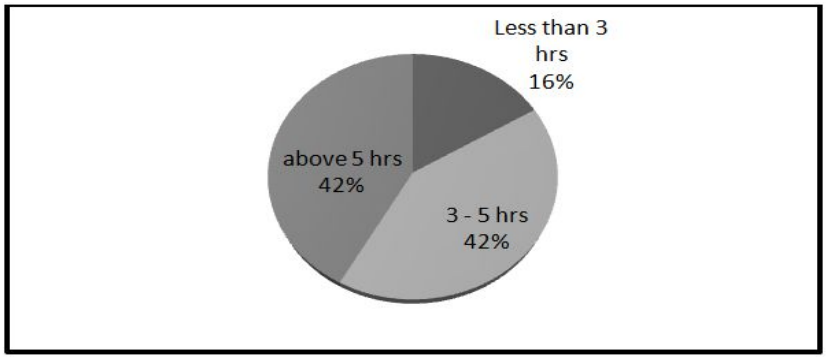


Figure 3: Denotes that 42 % of the Respondents are Using Computer Between 3 and 5hrs Per Day and Equally Above 5hrs Also. It Indicates that the Library Professionals are Using the Computer Most Frequently

Whether Feel Discomfort While Using Computer

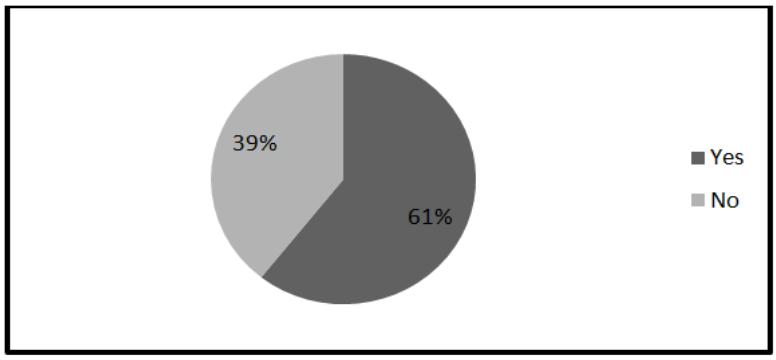
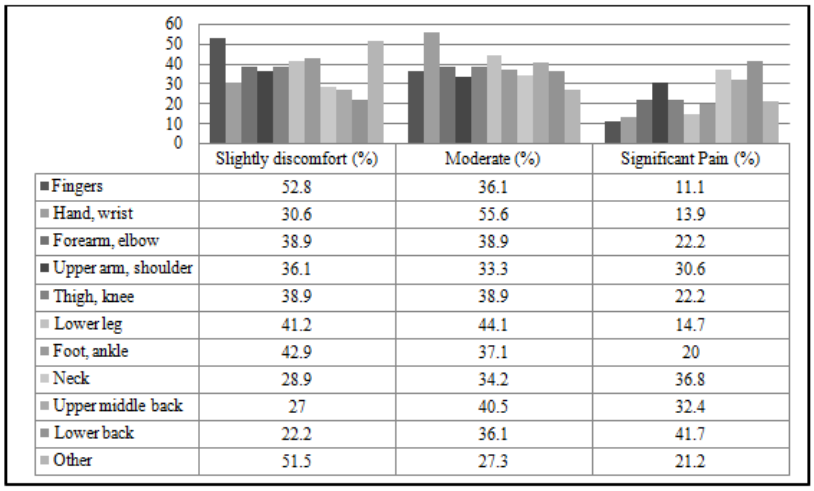


Figure 4: Describes that 61 % of the Respondents are Feeling Discomfort While Working on a Computer and 39% of the Respondents are Feeling Comfortable

Level of Discomfort While using Computer



	Slightly discomfort (%)	Moderate (%)	Significant Pain (%)
Fingers	52.8	36.1	11.1
Hand, wrist	30.6	55.6	13.9
Forearm, elbow	38.9	38.9	22.2
Upper arm, shoulder	36.1	33.3	30.6
Thigh, knee	38.9	38.9	22.2
Lower leg	41.2	44.1	14.7
Foot, ankle	42.9	37.1	20
Neck	28.9	34.2	36.8
Upper middle back	27	40.5	32.4
Lower back	22.2	36.1	41.7
Other	51.5	27.3	21.2

Figure 5

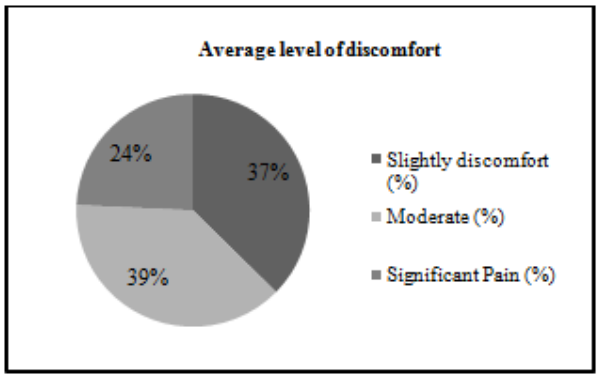


Figure 5 & 5a: Reveal that More than 37% of the Respondents are Feeling "Slightly Discomfort", 24% of Respondents Feel "Moderate" Comfort and 39% of Respondents are Feeling "Significant pain" While Working on a Computer

Postural Dimensions of Equipments

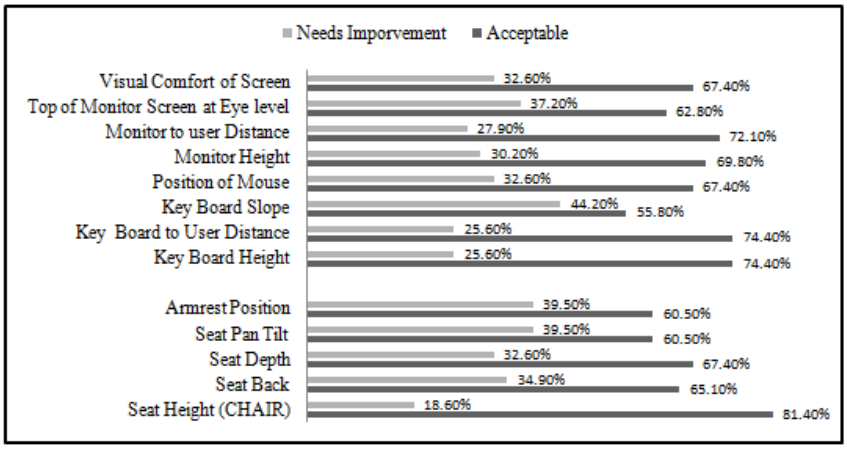


Figure 6

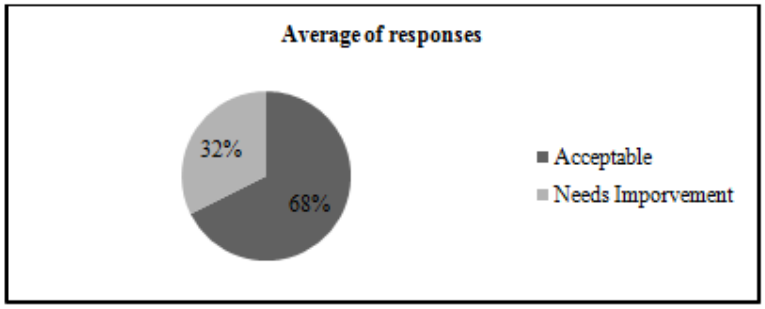


Figure 6 & 6a: Represent that 68% of the Libraries have the Postural Dimensions Equipments as Per the Ergonomic standards And 32% of Libraries Have to Equip Ergonomic Standard Equipments.

Awareness about Ergonomics and Ergonomics Standards:

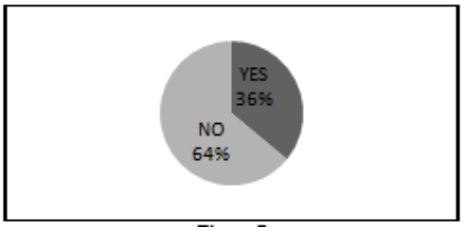


Figure 7: Shows that 64% of the Library Professionals are Not Aware of the Ergonomic and Ergonomic Standards. It Indicates that Seminars, Conference and Workshop about the Ergonomics and its Standards are to be Organized to Create Awareness among Library Professionals

Undergone Ergonomics Training:

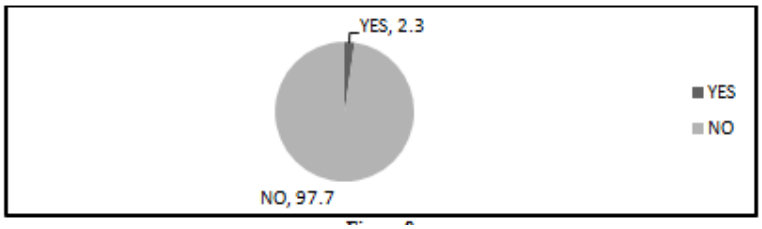


Figure 8: Shows that Only 2.3% of the Respondents Have Undergone the Ergonomics Training and the Rest of them Have Not Yet Undergone any form of the Ergonomics Training

Need for Ergonomics Training

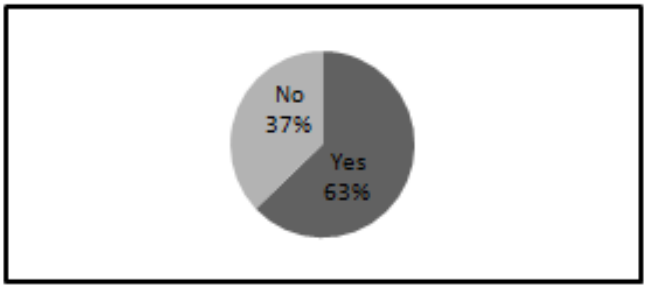


Figure 9: Indicates that 63% of the Respondents are in Need of the Ergonomics Training and 37% of Respondents Not Required Ergonomics Training

FINDINGS

The researcher has taken a small sample for the study and the findings are not enough to know about the overall status of the Self financing Engineering College Libraries in Coimbatore District. However the following findings and suggestions are made.

- Most of the libraries having its users up to 200 per day
- Computers have played a vital role in ICT based library housekeeping activities. Most of the library professionals are using the computers more than 5 hours per day
- Above 70% of the professionals are using computer for core areas of the library, like Library Automation, Digitalization of library Resources, Data Entry, etc.
- 80% of libraries have the adjustable ergonomic chair, but most libraries don't have the other required equipment like monitor riser, foot rest, mouse bridge, mouse wrist pad etc.
- 61% of respondents are feeling comfortable to work with computers and remaining 39% are feeling discomfort to work with computers.
- More than 50% of the respondents have **slight discomfort** in "fingers", 41.2% in "Lower leg", 42.9% in "Foot, ankle", and 41.7% of the respondents are feeling **significant pain** in "Low Back", 36.8% in "Neck", 32.4% in "Upper Middle Back"
- 68% of libraries are equipped with ergonomic standard "Postural Dimensions Equipment".
- Only 36% of the respondents are aware of "Ergonomics and Ergonomic Standards".
- Only 2% of the respondents have undergone the ergonomic training, and 63% of respondents expressed a need for ergonomic training

SUGGESTIONS

The following recommendations were made in order to rectify the ergonomic deficiencies identified in the computer workstations in Self-financing Engineering College Libraries in Coimbatore:

- Computer workstation in libraries should be constructed with Ergonomics standards and guidelines.
- Ergonomically designed "Postural Dimensions Equipments", should be provided to enhance work efficiency
- In order to create awareness about Ergonomic and its standards, training and awareness program should be organized.

REFERENCES

1. ***Aderonke O. Adeyemi (2009), "ICT Facilities: Ergonomic Effects on Academic Library Staff", (****Library Philosophy****)***
2. ***Sheau-yueh J. Chao, Ching Chang and Belinda Chiang (2001), "****Planning and implementing a library ergonomics program", (The Electronic Library) Vol. 40 No. 5 2001, pp. 327-341.*
3. ***Patricia L. Thibodeau, (1995), "****Ergonomics in the electronic library****", (****Bulleting of Medical Library Association****) Vol. 83 No. 3 July 1995, pp. 322-329.*

4. ***Judith Lynn Bube, (1985),*** *"The Ergonomics/Human Factors Approach to Health Sciences Libraries", (Bulletin of Medical Library Association) Vol. 73 No. 3 July 1985, pp. 254-258.*

5. ***Chandra A.M, Suhana Ghosh, Sangita Barman and Dhruba Prosan Chakravarti, (2009),*** *"Ergonomic Issues in Academic Libraries in Kolkata, West Bengal: A Pilot Study" (Library Philosophy and Practice) June.*

6. ***Prabhu M, Ally Sornam S, (2015),*** *"Ergonomics And Workplace Design in Libraries: in Ocerview ", (International Journal of Business Intelligence & Innovations) Vol. 3 No.2 March 2015, pp. 100-107.*

7. ***Mahalakshmi K, Ally Sornam S, (2011),*** *"Ergonomics and techno stress among library professionals of engineering colleges of Anna University", (Singapore Journal of Library & Information Management) Vol. 40 pp. 89-102.*

8. *http://www.lib.uiowa.edu/hr/staff-services/ergonomicsplan.html*

9. *http://www.standford.edu/dept/EHS/work/ergo/*

10. *http://www.ubhs.berkely.edu/FacStaff/Ergonomics/ergguide.htm*